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# **АКТУАЛЬНІ ПИТАННЯ ТЕОРЕТИЧНОЇ ТА ПРАКТИЧНОЇ МЕДИЦИНИ**

## **Topical Issues of Clinical and Theoretical Medicine**

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resolves by 3-4 months of age, generally supportive care; drug-induced neutropenia: normal bone marrow reserve, but has been associated with a late maturational arrest, antibody or complement mediated neutrophil destruction, treatment consists of stopping unnecessary medications; infection related neutropenia: normal bone marrow reserve, virus induced anti-neutrophil antibody; parvovirus B19 and HIV can be screened, no treatment generally necessary; hypersplenism: normal bone marrow reserve, sequestration/possible destruction of neutrophils in the spleen, associated with malaria, TB, neoplasm, collagen-vascular diseases, hemolytic anemia, spherocytes and tailed RBC on blood smear, treat underlying disorder; pseudo-neutropenia (severe infection): normal bone marrow reserve; generally associated with increases in marginated and tissue pools, mild and spontaneously resolves; Shwachman-Diamond Syndrome: primary decrease in bone marrow reserve, AR, S, extremely rare, steatorrhea from exocrine pancreatic deficiency, metaphyseal dysplasia, 50% survival; 1/3 progress to myelodysplastic syndrome or acute myeloid leukemia, normal sweat chloride; chemotherapy: direct toxicity to neutrophil precursors results in a severe reduction in bone marrow reserve (severity dependent on the intensity of chemotherapy agents used), generally a high risk of infection with poor marrow reserve and generalized suppression of the immune system.

### **CONTENT OF COBALT IN BIOLOGICAL FLUIDS OF FULL-TERM NEWBORNS AS THE PREDICTOR OF PERINATAL HYPOXIC DAMAGE OF CNS**

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Influence of Co content on the system mother-placenta-fetus-newborn children born with hypoxia. Determination of microelement (ME) performed in serum and erythrocytes 30 pregnant women and their infants who have suffered asphyxia at birth. Comparison group consisted of 30 healthy women and their 30 healthy full-term infants. The content of trace elements in biomaterials newborns and their mothers was determined by atomic absorption spectrophotometry mass spectrophotometer C-115M1, manufacturing NPO "Selmi" (Ukraine).

In the placenta of women who gave birth to children with hypoxia observed deficit Co, which creates conditions for faster penetration him to the fetus, but at the same time accumulation feature is suppressed. Serum and red blood cells of pregnant women who gave birth to children with CNS observed a significant lack of cobalt. We also investigated the features of ME content in serum and erythrocytes and especially their renal excretion in term neonates who underwent perinatal hypoxic of the CNS. These children in neonatal there a significant imbalance of serum and erythrocyte content Co. One of the factors of this imbalance ME if perinatal hypoxic of the CNS in term infants is inhibition of excretion of ME. It is proved that an imbalance of serum and erythrocyte Co content in the body of the fetus and newborn, resulting in reduction of Co pregnant women and dysfunction placental hypoxia. Predictors properties of Co detected in serum  $\geq 3,01$  mmol/l in erythrocytes  $\geq 0,61$  mg / mg ash and urine  $\leq 0,40$  mmol / l, respectively. Prognostic significance (index of informing and prognostic factor) was high.

### **THE VIOLATIONS OF NEURO-MENTAL DEVELOPMENT OF CHILDREN WHO HAVE SUFFERED FROM PERINATAL HYPOXIC DAMAGE OF CENTRAL NERVOUS SYSTEM**

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The problem of children adaptation who suffered from perinatal hypoxic damage (PHD) of the central nervous system (CNS) is very important. The brain damage on the early stages of ontogeny violates deterministic evolutionary scenario of pre-, intra- and postnatal adaptation, slows ripening of parameters of functional CNS, which increase the likelihood of developing of secondary cerebral defects. The effects of PHD of CNS reflect not only the severity of injuries, but the effectiveness of

the implementation of sanogenetic mechanisms of the body, medical and social factors to compensatetimely theneuroontogenesis distortion. The first year of life is characterized by intense pace of physical, neuro-psychological development (NPD) and functional maturation of organs and systems. The deterioration in the status of NPD of children undergoing PHD of CNS has been marked lately. Even with timely immunosuppressive therapy, about 70 % of children who had hypoxia did not reach the age of NPD.

Purpose ofthework:to study the influence of perinatal hypoxia of CNS on the dynamics of neuropsychological development of children in the first year of life.

Materials and methos: 73 children born in 2011-2013 suffered from PHD of CNS and 20 healthy mature newborns (MN) without perinatal history were under the supervision in the dynamics of the first year of life. The gestational age of the patients was 38 weeks or more. Depending on the severity of PHD of CNS, the children were divided into two groups : I group - 38 children with severe damage of central nervous system (Apgar scale at 1- min - less than 4 points); II group - 35 children with moderate damage of central nervous system (Apgar scale at 1- min. 4-6 points). The control group (III group) - 20 newborns without PHD of CNS. The psychomotor development of children in the 1st year of life was assessed according to our method (scale of Zhurba L.T., Mastyukova Y.M. (1981, 2003), Pechora K.L., Pantyukhina G.V. (1996)) with the definition of groups and middle age of NPD and the individual lines of development. The statistical analysis of the results was carried out using Microsoft Excel, Windows XP. To assess the likelihood of differences of averages Student test was calculated, the methods suitable for biomedical research were applied.

The study indicators reflecting physical development, found that weight, body length, chest circumference, weigh-height ratio in the group of children who underwent PHD of CNS were significantly ( $p < 0,001$ ) lower than in children in the control group. In children with PHD of the CNS aged 1 month. NDP delay dominated for 1 epicrisis period (69,8%) as to 1-2 (48,0%), 3-4 (32,8%) rates. At the age of 10 months, there was a large number of children delayed by 2 epicrisis terms (30,1%) 1-2 (39,7%), 3-5 (17,8%), 4-5 (32,8%) analyzers; 3 epicrisis terms (17,8%), 1-2 (50,7%), 3-4 (12,3) and 3-5 (17,8%) rates. At the age of 12 months, 8,2% of children had underdevelopment for 4 epicrisis terms and 6,8% of children - more than 5 epicrisis terms.

Among children who underwent PHD of CNS, high proportion of disability is recorded. This study recorded 52% (38) full-term newborns. The high rate of complications of CNS demonstrates the need for comprehensive differential treatment and rehabilitation of children with hypoxia, taking into consideration etiological factor, factors that act in the ante-, intra-and post-natal periods, clinical course and pathologic changes detected in neurosonography.

## ATTENTION FUNCTION IN CHILDREN UNDERGOING ENCEPHALOPATHY

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The health status in older childhood and adults is largely determined by the characteristics of pregnancy and childbirth. Of particular importance is the condition of the central nervous system that determines the value and importance of the individual in society, the success of its operations for the benefit of themselves and society. A large number of factors can change the normal functioning of the central nervous system. One of the most common can be hypoxia that occurs on a background of various diseases of the mother, fetus, baby. It can lead to encephalopathy (HIE), mild forms which can be considered cured after a few years. However, their action can extend to a much longer period and appear at school age in a variety of violations of certain cognitive functions.

The aim of the study was to examine attention function at adolescents and who had encephalopathy at neonatal period.

Were examined 40 children aged 12 to 16 years. The contingent was divided into two groups. The first group consisted of 20 children. All of them suffered encephalopathy in the neonatal period. The second group was the control group. We studied the clinical history data. The main research